



Patient Name: Bare, Leeann

DOB: 1964-12-18

Age: 56

Date of Service: Wednesday, October 20th, 2021

Patient is requesting a superbill for this visit.

Primary Care Physician: Dr. AJ Foster

Phone number: 858-554-9800

Dr. Bob Fox Rheumatologist/Immunologist

Pharmacy Name: CVS

Pharmacy Number: 619-563-9990

Pharmacy Address: 10350 Friars Road San Diego, CA 92120

The patient gave permission for this telemedicine visit.

Dr. Herbst has a medical license or approval for this telemedicine visit in the state of CA.

I performed this visit using real-time telehealth tools, including a Panterra Streams live video (or phone) connection between my location and the patient's location. Prior to initiating the services, I obtained the patient's informed verbal consent on Monday, October 18th, 2021 to perform this visit using the telehealth tools and answered all the questions the patient had about the telehealth interaction.

Originating Site: Total Lipedema Care, Beverly Hills, CA and Tucson, AZ

Home Distant Site: 6136 Calle Mariselda Unit 101, San Diego, CA, 92124

Physical exam, if recorded, is based on patient reported information or obtained through peripheral.

CC:Lipedema. Ehlos Danlers. Psoriatic Arthritis. She hopes to confirm a diagnosis, get recommendations for medical and surgical treatment.

HPI: Leeann Bare is a 56 year young female with a history of Psoriatic Arthritis, Hidradenitis Supprativa, Ehlos Danlos Syndrome - Connective Tissue Reynaud's Syndrome, Sjogren's Syndrome, Rosacea Acne, COVID Long Hauhler's, who presents for care. Her loose connective tissue disease began in her mid twenties. Seemed to be progressing in her early fifties. She has had significant changes in the last 2-3 years. Has developed fat fads on her shins. What helps her sometimes with her loose connective tissue is exercising and using a vibration plate. If she does not exercise, stay hydrated or use the vibration plate it gets worse. Progressing overtime especially over the past year.

Years ago she had liposuction on the outer upper thigh right below the hip - the saddlebag. She had been in a car accident as a young adult. She had a large hematoma where the muscle popped through the lining and bled and fat deposited there to the size of a softball causing a lot of pain. It was a irregular fatty deposit.

Key Complaint: The aesthetics of her legs and arms. Seems to be progressing. Also, had developed pain on her right shin where a fat pad has formed. Pain has been consistant and intermittent for 2 years now.

Onset: She was thin when young but her legs have always been disproportionately greater. Some days it is embarassing and she does not like to wear shorts. The deposits on her legs look like her grandmother (tree trunks). Her calves have been getting large. She has fat pads on the top of her shin. She went to her FP and she was having pain on her knee. The pain was burning pain and the mass started to grow and she started getting the

pad on her left leg. She was told she has OA.

Swelling? Some days her legs just look worse. She retains water sometimes in her fingers. She has issues with getting her rings off at times, she can feel more bloated and sees changes in her legs day to day.

Swelling worse during summer? Yes

Swelling worse when standing? She has not thought about this. She thinks so. It is hard to stand for long periods of time.

Swelling worse when sitting? Sometimes.

Limbs tight and heavy especially at end of day? Not that she has noticed.

Do you elevate your legs? Yes she wants to be propped up.

Does swelling resolve with elevation or sleeping overnight? At night her legs do not feel good. She feels like her legs want to move.

Areas with lipedema are unaffected by caloric restriction? Upper and lower legs. She is starting to develop nodules in her upper arm tissue. She is a paddler and she has a lot of muscles but she also has nodules.

Reduced ability to get around (ambulation)? Her joint pain and her ankles and feet reduce her ability to ambulate. A lot of her sports are paddling or water sports.

Any areas of your body that are colder than other parts? Her feet have always been very cold. For years trying to ski caused frostbite no matter what kind of boots or socks she used. She had to get the electric heaters installed. Her hands and fingers are very cold.

Any decrease in social activity?

Diet: Whole food. Limits dairy (occasional only), nightshades, eliminated red meat - protein (mostly fish and chicken), eating leafy greens, fruit (bannanas and blueberries mostly), rice, and trying to lower gluten intake. Her first meal of the day is at 8:00 am. At times, she does not eat until the afternoon. Her last meal of the day is between 6:00 - 8:00 pm. Intakes 1-2 meals per day with 1-3 snacks.

Exercise: Standup paddleboarding, outrigger paddling and walking. Exercises 1-1.5 hours when paddling. Excessive sweating. Whole body vibration.

Used a foam roller in the past.

Has a massage gun.

Pain

Average Daily Pain Score (1-10): 1-7

Worst Daily Pain Score (1-10): 8

Lowest Daily Pain Score (1-10): 1

Pain is in: Back (SI Joints), neck, trapazoids shoulder, ankles, fingers and wrists

Conservative Therapy

Compression Garments: Yes. She is starting to wear more compression.

Sequential Pneumatic Compression Pump: No.

Manual Lymphatic Drainage Therapy: Yes.

Deep Tissue Therapy: Yes.

Weight

Any history of weight gain: Yes.

Any history of weight loss: Yes.

Ever use of the following meds

Phentermine:

Dextroamphetamine:

Adderall: She was put on a low dose of Adderall this year

Metformin:

MEDICAL HISTORY

First Menses: 13 or 14

Menopause: 54

1 Pregnancies

0 Live Births

Psoriatic Arthritis

Hidradenitis Suppurativa

Ehlers Danlos Syndrome

Connective Tissue Reynaud's Syndrome Sjogren's Syndrome Rosacea Acne COVID Long Hauler's

Cholesterol/blood fat problems

Migraines/headaches

POTS

Scoliosis

Slow heart rate

"The slow heart rate was prior to covid; Covid in december or 2020 and heart rate elevated to 70-90 resting; heart rate has resolved down into the 60s but prior to Covid I typically ran in the low 50s"

Varicose veins

Venous insufficiency - she does not know if this needs to be treated

SURGICAL HISTORY

Tonsil and anoidectomy

Childhood Hemroidectomy approx 2001 PE Tubes

Childhood Cervical Cancer

Leep and Cone Biopsy

Liposuction of the saddlebags due to a MVA

MEDICATIONS

Allergies: Sulfa I.V. Demerol

Medications:

Humira (restarting week of 10/18)

Celebrex 1 daily

Ambien D PRN

Adderall 15mg 1 daily

Wellbutrin 150mg 1 daily (restarting week of 10/18)

Dymista

Vitamin D

[Medications were reviewed]

SOCIAL HISTORY

Smoking: N/A

Alcohol: Limited Per Week - Social on the weekend red wine

Any other drugs used? 0

REVIEW OF SYSTEMS

General: Difficulty sleeping. No complaints of: flu-like symptoms.

HEENT: Difficulty swallowing, neck feels swollen, dry eyes, dry mouth. No complaints of: thick skull fat

CV: Heart palpitations. No complaints of: chest pain.

Dermatology: Easy bruising, stretchmarks, burning sensations of the skin or unusual scarring. No complaints of: itching in skin/tissue, water trickling under skin

Endocrine: Fatigue level 1-9 (no specific rate), cold feet/hands, feeling thirsty all the time. No complaints

of: pre-diabetes.

Gastrointestinal: Bloating, diarrhea, constipation, stomach/intestinal pain, nausea. No complaints of: Vomiting, early satiety

Genitourinary: Pain with intercourse, incontinence, nocturia (2-3 times)

Immunology/Infectious Disease/Allergy: Cellulitis, C-reactive protein, ESR, Allergies: Sulfa, IV Demerol, molds, grasses, garlic and onions. No history of: Lyme disease, high d-dimer

Musculoskeletal: Muscle weakness, muscle aches, joint aches, lower back pain, flexible joints. No complaints of: Tight tendons/ligaments and muscle cramps.

Neurology: Poor concentration, dizziness and numbness of the fingers and toes (Reynaud's flare). No complaints of: Vibrations in tissue, vertigo, hearing loss

Pulmonary: Frequent congestion. No complaints of: shortness of breath, sleep apnea.

Psychiatry: Anxiety, depression, physical/sexual/emotional trauma.

Vascular: Water retention. No complaints of: Edema, blood clots, dark skin on lower legs

Other symptoms or concerns: See history of present illness. Her right shin hurts all the way up and down and is nodular.

FAMILY HISTORY

Rheumatoid Arthritis Plaque Psoriasis Osteoarthritis Congestive Heart Failure Colon Cancer Uterine Cancer Heart Attack Stroke

Her Dad looked like he had bigger legs and her cousin has similar issues. Her mother did not have lipedema. Her mother was Hungarian and was taller and slender but she had autoimmune disease and passed from complications due to autoimmune disease. Her body shape is like her father's. Her father had varicose veins. Her maternal grandmother had vein issues as well.

PHOTOGRAPH AND TELEMEDICINE EXAM

Weight: 183 Height: 5'10" BMI: 26.31

General

Thighs: Mattress pattern

Calves: Fat pad visible below the knee

Panniculus: None

Diagnostic Criteria for lipedema

Female: **Yes**

Bilateral and symmetrical manifestation with minimal involvement of the feet: **Yes**

Minimal pitting edema: **Yes**

Negative Kaposi–Stemmer sign: **Yes**

Pain, tenderness on pressure: **Yes**

Easy bruising: **Yes**

Persistent enlargement after elevation of the extremities or weight loss: **Yes**

Arms are affected 80% of the time: **Yes**

Hypothermia of the skin: **Yes**

Swelling worsens with orthostasis in summer: **Yes**

Lipedema tissue unaffected by caloric restriction, exercise, bariatric surgery: **Yes**

Vascular manifestation such as cherry angiomas, telangiectasia, venous disease: **Yes**

Does the patient meet criteria for lipedema? **Yes**

Labs:

Her kidneys were sluggish but were better this time.

Has elevated calcium.

Elevated anion gap.

Creatinine was elevated.

The lower extremity functional scale (**LEFS**) is a measure of disability for the legs. Lower scores indicate more dysfunction. Score =

Five Questions for Hypermobility: 3/5

A positive answer for two or more questions has a sensitivity of 91%, a specificity of 75% for predicting

hypermobility joints (BMC Musculoskelet Disord. 2020; 21: 174).

She turns her ankles all the time for no reason

Has two doctor friends who paddles with her and she told her she has EDS

ASSESSMENT

1. Possible Lipedema Stage 1-2 Type III and IV

Lipedema is a congenital enlargement (hyperplasia of the adipose tissue) of the loose connective (fat) tissue on the legs almost exclusively seen in women by the third decade. According to an epidemiologic study by Földi E and Földi M, lipedema affects 11% of the female population. Lipedema was initially described by Allen and Hines in 1940; its etiology remains unknown and it remains under-diagnosed. Classically women with lipedema have disproportionate bodies with larger legs and hips than arms and waist. In 1951 Wold et al. analyzed 119 cases and provided the diagnostic criteria for lipedema:

- 1) Almost exclusive occurrence in women
- 2) Bilateral and symmetrical manifestation with minimal involvement of the feet
- 3) Minimal pitting edema; the Kaposi-Stemmer sign is negative
- 4) Pain, tenderness on pressure
- 5) Increased vascular fragility; easy bruising
- 6) Persistent enlargement after elevation of the extremities or weight loss
- 7) Arms are affected 80% of the time
- 8) Hypothermia of the skin
- 9) Swelling worsens with orthostasis in summer
- 10) Unaffected by caloric restriction

The stage of disease refers to how the skin and tissue appear visually:

When the skin is still smooth, the lipedema is stage 1.

When the skin and tissue have indentations in a mattress pattern, the lipedema is stage 2. Lipedema stage 3 has larger out-pockets of tissue.

The types of lipedema refer to the location of the fat:

Type I: In the area of the buttocks and hips (saddle bag phenomenon)

Type II: Buttocks to knees, with formation of folds of fat around the inner side of the knee

Type III: Buttocks to ankles

Type IV: Arms

Type V: Legs

In lipedema, there are increased macrophages in tissue, a microangiopathy (leading to increased bruising), dilation of subdermal capillaries which can be seen as telangiectasias and petechiae on the skin, dilation and leakage of lymphatic vessels in the subcutaneous fat - leaking lymphatics into subcutaneous fat increases growth of adipose tissue in mouse models.

Diuretics such as Lasix concentrate proteins in the interstitium increasing the work load of the lymphatic system. Do not use diuretics.

Corticosteroids should be avoided as they weaken blood vessels (and lymphatics) and cause a rebound increase in adipose growth once stopped.

For any surgery, there must be professional manual lymphatic drainage at minimum one week before and for four weeks after the surgery - longer if there is a slow recovery. In lipedema and lymphedema (lymphatic dysfunction), there is difficulty in handling all the fluid and inflammation after surgery. This means there is a need for hands on MLD from a trained practitioner. Mismanagement of MLD after surgery would risk the development of difficult to control lymphedema. Adequate MLD after surgery is standard of care (<https://pubmed.ncbi.nlm.nih.gov/34049453/>).

2. Hypermobility Ehlers Danlos syndrome

Hypermobility Joint Syndrome: Generalized joint hypermobility (GJH) or Ehlers Danlos Syndrome hypermobility type (EDS-HT), better known as hypermobility spectrum disorders, are conditions causing joint laxity. The gene for either condition is not known although tenascin-X made from the TNXB gene has been found in some families. Tenascin-X plays an important role in organizing and maintaining the structure of tissues that support muscles, joints, organs, and skin (connective tissues). In particular, studies suggest that tenascin-X helps regulate production and assembly of certain types of collagen. Collagens are a family of proteins that strengthen and support connective tissues throughout the body. Tenascin-X is also involved in regulating the structure and stability of elastic fibers, which provide flexibility and stretchiness (elasticity) to connective tissues.

Fat tissue is known as loose connective tissue which consists of sheets of connective tissue called fascia, fibers including collagen and elastin, fat cells, immune cells, fibroblasts, blood and lymph vessels. Between cells water is

bound to glycosaminoglycans (sugar molecules). Blood vessels, nerves and lymphatics pass through fat on fascia highways and fat lobules slide on thin wet fascia ropes between skin and muscle accommodating movement. When there are changes in the genes causing connective tissue proteins to be differently formed, skin loses its ability to maintain its shape, blood vessels leak, lymph vessels dilate and fail to pump, and the fascia ropes tighten and inhibit movement. Fluid, protein, and cell waste sit in fat tissue, providing all the nutrients and growth factors to make fat cells grow and proliferate in this nutrient-rich environment. Joints, muscles, tendons, and ligaments become looser and more fragile.

Not everyone with hypermobile joints develops symptoms. Different genetic changes may also result in similar symptoms. Fat disorders, including lipomas, may result from changes in genes important in mobility.

The diagnosis of EDS-HT based on history and a clinical exam. Women with hypermobile joints have a risk of osteoporosis and should have a DEXA scan for bone disease at menopause. An echocardiogram should also be performed to determine if the aortic root is dilated. There are also a lot of gastrointestinal issues in EDS.

Find out more here: <https://www.ehlers-danlos.com/2017-eds-classification-non-experts/gastrointestinal-involvement-ehlers-danlos-syndromes/>

You can read more about EDS-HT here: <http://www.ncbi.nlm.nih.gov/books/NBK1279/> and here: <https://www.cda-adc.ca/jcda/vol-67/issue-6/330.html>

What are some findings in GJH or EDS-HT?

1. Celiac Disease: There is an increased prevalence of potential celiac disease. Serological screening of celiac disease is recommended for to rule out organic problems in the presence gastrointestinal symptoms in patients with GJH or EDS-HT.1
2. ADHD: GJH may represent a marker for an underlying systemic disorder involving both connective tissue and the central nervous system. Specifically, attention deficit hyperactivity disorder (ADHD) was significantly associated with GJH.2
3. Complex Syndromes: EDS has been linked to Chiari Malformation, Postural Orthostatic Tachycardia Syndrome, and Mast Cell Activation Syndrome.3
4. Ocular complications: Find more here: totaleyecare.com

I will send you a paper on Master Class for EDS.

PLAN

1. See Dr Sarah Lucas to assess your veins: <https://health.usnews.com/doctors/sarah-lucas-975645>
She does not need a referral.

2. **Look into connective tissue genetic testing:** Prevention Genetics or

<https://www.ncbi.nlm.nih.gov/gtr/tests/561723/> 47 genes for connective tissue disease

<https://www.ncbi.nlm.nih.gov/gtr/labs/243105/>

Please look into this and let me know what you want to do in terms of getting this testing done.

3. **Is POTS an autoimmune disease?** We do not have the answer to this but if you are a person with lipedema and also have some autonomic dysfunction such as dizziness, postural; orthostatic tachycardia syndrome (POTS) or a positive tilt table test, it might be a good idea to get tested for antibodies to the autonomic nervous system. A company in Germany does this testing. You can find forms here: <https://www.celltrend.de/en/pots-cfs-me-crps/>

4. **Mitochondria:** Mitochondria are small parts of our cells that give us energy and help reduce toxins.

Mitochondria do not function well in chronic disease. To support optimal functioning of your mitochondria the following are needed:

- a. A good **B-100 complex**.
- b. **Coenzyme Q10** that is easy to absorb. Consider Doctor's Best high absorption 400 mg.
- c. **Nicotinamide riboside:** Nicotinamide riboside (NR) is a precursor for NAD⁺, an energy component of cells. NR has been shown to reduce senescence of stem cells and increased life span in mice (PMID: 27127236). NR also rescued the disrupted cellular integrity of mitochondria and the nucleus in the livers of obese and diabetic mice (PMID: 25974041). NR is also thought to have properties that are insulin sensitizing, enhancing to exercise, resisting to negative effects of high-fat diet, and neuroprotecting (PMID: 24071780). TRU Niagen, Thorne Research and Jarrow are good brands - follow manufacturers recommendations. For TRU Niagen this is 300 mg daily.
- d. **Glycine:** Glycine is the smallest amino acid in the body and makes up to 30% of collagen molecules. Glycine supplementation decreases mitochondrial swelling, and decreases reactive oxygen species. Moreover, glycine

treatment improves mitochondrial membrane potential and restores liver mitochondrial ATP. Take a small amount per day, about 2-4 grams stirred into tea or coffee.

5. Gut health:

Start a good Bifido probiotic.

Akkermansia muciniphila - you can get this as a supplement but metformin will also increase this good gut bacteria.

Consider metformin treatment. Prescribed.

6. **EDS**: ECHOCardiogram - please check with your PCP to get this done; they have to check the aortic root
DEXA for hip and spine- to check for fragile bones due to EDS

7. I agree with the **Adderall**.

Dextroamphetamine: Arterioles are innervated by both adrenergic and cholinergic neurons involved in regulation of constriction and vasodilation, respectively (Ausprunk et al., 1973). Venous pressure increases on standing causing blood vessels to constrict to maintain blood pressure. In healthy individuals, orthostatic pooling of venous blood in the legs and abdomen begins almost immediately upon the change from supine to the erect posture. One half to one liter of thoracic blood is transferred to the regions below the diaphragm. Approximately 80% of the blood pooled in the lower limb is contained in the upper leg (thighs, buttocks) with less pooling in the calf and foot; additionally, there is some modest pooling in the abdominal and pelvic regions. When venous filling in the dependent parts raises intravenous pressure to 25 mmHg or more, a local sympathetic 'axon reflex,' or 'venoarteriolar reflex' is activated. The receptor sites for these reflexes appear to be in small veins in cutaneous, subcutaneous adipose tissue and skeletal muscle tissue and the effector site is the corresponding arterioles. In Dercum's disease (DD) there is a loss of the venoarteriolar reflex (Skagen et al., 1986). This may be due to constant or overstimulation of the sympathetic nervous system (Skagen, 1983). As a person with DD stands, the arterioles do not constrict normally with increased venous pressure and more fluid and protein leaks out into the interstitium resulting in idiopathic edema. If the extra fluid is not picked up efficiently by the lymphatic system, then the fluid pushes cells further away from their oxygen source resulting in hypoxia. During hypoxia, excitation of the venoarteriolar reflex normally causes a constriction of vessels (Wang et al., 1996) but this also fails. Blood vessels are stimulated to grow by the hypoxia but these vessels grow quickly and are leaky perpetuating the problem (Prado-Lopez et al., 2010). This protein rich fluid or pre-lymph in the interstitium induces growth of fat (Harvey et al., 2005).

What causes the failed veno-arteriolar reflex? As in Raynaud's disease, this local vasomotor dysfunction reflects either postganglionic sympathetic insufficiency with vascular tone failure or altered smooth muscle cells' responses (Stoyneva, 2004). As in diabetes where we provide more insulin to drive sugar into cells through failing insulin receptors, adding increased local sympathetic input using dextroamphetamine may normalize the failed veno-arteriolar reflex. Amphetamine has been used successfully to treat conditions associated with pain such as severe migraine headaches (Check and Cohen, 2011). Topical and intravenous lidocaine is also useful (Skagen et al., 1986; Juhlin, 1986; Petersen and Kastrup, 1987; Desai et al., 2008).

Lymphatic vessels are innervated by both cholinergic and adrenergic nerves with evidence of alpha and beta adrenergic receptors as well as presynaptic alpha 2 receptors (McHale, NG In: Lymph stasis: Pathophysiology, diagnosis, and treatment. Ed. Waldemar L. Olszewski <<http://www.google.com/search?tbo=p&tbo=m&bks&q=inauthor:%22Waldemar+L.+Olszewski%22>>; 1991). Norepinephrine increases the efficiency of lymphatic pumping (McHale et al. Am J Physiol 1987). Histamine receptors are also located on lymphatic smooth muscle and activation of H1 accelerates and H2 decelerates the rhythm of spontaneous contractions. With lymphedema, a slightly greater contractile response to norepinephrine and serotonin were observed. In dogs, low intra-arterial doses of adrenaline increased lymph flow even in the presence of marked arterial vasoconstriction (Micheli P and Glasser AH. Br J Pharmacol 53, 499, 1975). ASA and indomethacin inhibited spontaneous contractions (Johnston and Feuer 1983). These data suggest that dextroamphetamine acting through adrenergic receptors can improve lymphatic function.

I dose dextroamphetamine as 1/4 of a 5mg tablet daily for 8 days, then 1/2 a tablet for 8 days, then one tablet daily for 8 days, then 1&1/2 tablets daily for 8 days, then two tablets daily based on lack of palpitations, headaches, jitteriness, hypertension or tachycardia (also watch for additional symptoms such as irritability). The tablet size is increased to 10mg at that time and the dose is increased to 15mg daily (1&1/2 tablets a day for 8 days) then 20mg daily from then on (total of two 10-mg tablets daily). Anti-hypertensives may be added as needed. Avoid beta-blockers as they work against the dextroamphetamine. The final dose is 20-mg a day. The goal is to go slow - it is not a race to get up to the final dose and you should see some signs of improvement in mental clarity, energy, fluid reduction even at the lower doses. **YOU CANNOT TAKE THIS MEDICATION IF YOU**

HAVE LIVER DISEASE.

8. Lymph Pumps (E0652): I recommend two pumps for treatment of rare adipose disorders: Lymphapress Optimal (877-316-8458) or Flexitouch (866-435-3948). The benefit of the Lympha Press is you can treat both legs at one time. These are the only two pumps I allow my patients to use. It is not standard practice to prescribe sequential compression pumps (SCDs) usually reserved for prevention of deep venous thromboses or for treatment of cardiovascular edema (E0650; E0651). In the latter two situations, the lymphatic vessels are intact and pump normally. As a consequence of using SCDs in RADs, SCD pumps push the fluid up the leg into the abdominal area where it accumulates due to lymphatic dysfunction. As this fluid sits in the tissue with all its nutrients and protein, fat grows. From published data, we know that lymph makes fat grow (Nat Genet. 2005 Oct;37(10):1023-4). With the Lymphapress or Flexitouch, the abdomen is treated along with the leg and the chest is treated along with the arm preventing dangerous pooling of lymph fluid. A E0652 device with a segmented, multi-ported pump allows for individual pressure calibration at each port. This allows the patient to alter pressure in areas of severe pain as found in Dercum's disease or lipedema while obtaining a compression sleeve that treats the abdomen and/or chest. **I will order the Lymphapress if you give me the go-ahead.**

9. Myofascial release therapy.

ICD-10 codes for this visit

R60.9 Lipedema is possible - needs a physical exam
I83.813 Varicose veins of bilateral lower extremities with pain
I87.2 Chronic venous insufficiency
M79. 605 Pain in the left leg
M79. 604 Pain in the right leg
M79.601 Pain in the right arm
M79.602 Pain in the left arm
Q79.6 Hypermobility Ehlers Danlos Syndrome
G89.4 Chronic pain syndrome

This visit was 60 minutes with additional time spent in chart review of our clinical questionnaire and data input into our EMR by the patient, and ordering tests or procedures after the face-to-face portion of the visit via telemedicine, with >50% face-to face time spent counseling on lipedema and other causes of fat tissue growth and possible treatments that may help Leeann.

Electronically signed by Karen L. Herbst, MD, PhD Monday, October 18th, 2021

Karen L. Herbst, MD, PC

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